

**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSTRUCTION SPECIFICATIONS**  
**FISHPOND MANAGEMENT**

**1. Scope**

Specifications for Fishpond Management shall describe the requirements for applying the practices to achieve its intended purpose and shall be prepared for each site or project. Use approved specification sheets, technical notes, job sheets, and narrative documentation in the conservation plan. For technical assistance related to the requirements for engineering, permits, and fishery management, all initial contacts will be with the NRCS county level field office.

**2. Stocking Specifications**

Species selection should be made in consultation with specialists trained in aquatic biology.

**Bass, bluegill, and redear combination.** Stock with hatchery-produced fish. Stock a total of 500 bluegill sunfish and redeared sunfish and 50 largemouth bass per surface acre.

**Catfish (for game fishponds only).** With the regular bass, bluegill, redear combination, 50 channel catfish per acre may be added if desired. Bass and other predaceous fish will eat small catfish. Therefore, add catfish fingerlings only in new or renovated ponds. Do not stock catfish in combination with bluegills only, since catfish are not very efficient predators. The bluegills will become overcrowded, resulting in poor growth of both species.

**Catfish stocked alone for sport fish.** Channel catfish can be grown in farm ponds for sport fishing and home use. For unfertilized ponds without supplemental feeding, stock at 100 to 150 per acre. For remaining ponds, stock up to 200 to 250 per acre. Producing catfish as a game fish is best done by using supplemental feeding. Stock 400 to 1,000 fingerlings per acre, depending on the frequency and amount of supplemental feeding.

**Hybrid bream and bass.** Stocking hybrid sunfish offers some attractive management possibilities in small ponds of 3 acres or less. Maximum growth can be attained by stocking 750 hybrids and 50 bass per acre. Supplemental feeding may be needed. A listing of commercial aquaculture suppliers is available in the Directory of Kansas Fish Producers compiled by the Kansas Aquaculture Association.

**Sterile grass carp.** Grass carp can be stocked in all new ponds as a weed preventive measure where planning concerns identify potential weed problems. Fingerling grass carp should be stocked at a rate of three to five per acre. In older ponds, where weeds are an identified problem and where bass are present, a minimum carp size of 8 inches will be needed. The stocking rate for older ponds will depend on the severity of the weed problem. Slight weed problems will require a stocking rate of five per acre. Severe weed problems may require a stocking rate of up to 15 per acre.

**Crappie.** Do not stock crappie in farm ponds and small lakes, as these fish are not adapted to such bodies of water and usually cause serious overpopulation problems requiring complete pond renovation.

**3. Specifications for Clearing Muddy Ponds**

Water clarity problems are predictable and they will be assessed in the planning stage of a project. Conservation treatments in the watershed should be used to address these issues. Naturally occurring soil conditions that cause water clarity problems are readily identified by a soil scientist, by soil surveys, and by the use of comparison sites. Check existing ponds in the area to assess potential problems. Potential problems will be discussed with the pond owner and documented in the conservation plan.

The following specifications are provided where the landowner desires to solve existing problems with a high level of management and with financial input.

Alum at a rate of 15 pounds per acre is also effective.

The application of 300 to 500 pounds per surface acre of gypsum (land plaster) will also clear a muddy pond. The gypsum should be evenly spread over the pond and stirred with an outboard motor.

The use of hay can also help clear a muddy pond. Apply 7 to 10 square bales of hay per acre. The hay should be well cured. The bales should be broken and scattered over the water. Caution should be used during summer months to prevent oxygen depletion.

#### **4. Identify Overpopulation or Species Imbalance**

Common fish population problems include the following: overpopulation of small bluegills, overpopulation of small bass, or undesirable species stocked purposely or accidentally. This problem can be caused by improper harvest, poor water clarity, livestock use, human impacts, and environmental conditions. Identifiable resource concerns can surface with low productivity, poor fishing, and stunted or diseased fish. An assessment of the pond by a trained aquatic biologist will be completed before corrective measures are implemented. Seining, netting, water quality, and a history of use are important assessment elements.

#### **5. Complete Eradication**

Eradication is necessary when unwanted species are present or when bluegills are so abundant as to stop successful bass spawning. It will be carried out only if other management techniques are not feasible to meet the resource objectives. Always follow label directions when conducting chemically-assisted eradication and always consider the most efficient and environmentally-compatible method possible.

#### **6. Seining**

In small ponds that have no stumps and other vegetation, an overcrowded bluegill population in its early stages may be corrected by seining. Use a seine 50 to 100 feet long with ½-inch mesh which lets small fingerlings remain. Throw back all bass and keeping-size bluegills, but destroy small and intermediate-size bluegills. Seine at 10-day intervals until most of the intermediate-size bluegills have been removed.

#### **7. Draw Downs**

By reducing the volume of water, bluegills and other sunfish are concentrated, thus allowing better control by predator fish. When the water level is down, the soil chemistry of the exposed bottom changes and much of the nutrient material locked up in the bottom mud is released and made available for next year's fish growth. Draw downs also help control aquatic vegetation. Begin drawing down in fall and achieve maximum draw down by late November. Draw the water down 2 to 4 feet in August, depending on the size and depth of the lake. Allow the water level to come back to normal in mid-February in south part of the state and the end of February in the rest of the state. This practice is especially applicable to larger lakes and will also work on smaller ponds.

#### **8. Partial Kills**

Overcrowding by intermediate-sized bluegills can often be corrected by a partial kill. Use one pint of 5 percent liquid rotenone per 300 linear feet of shoreline placed in a thin line about 20 to 25 feet from the water's edge. Do this between September 15 and October 15 on a clear, still, and warm day between 11:00 a.m. and 2:00 p.m. Do not use in ponds less than 3 acres or on a windy day.

**Selective kills.** Shad can be killed with rotenone or antimycin A with little harm to game fish. Very small amounts are needed, but accurate measurements and correct application methods are necessary.

Chemicals will be applied by qualified personnel and according to label directions.

## **9. Supplemental Bass Stocking**

Supplemental stocking of 25 to 50 adult bass ( $\frac{1}{2}$  pound and larger) or 100 to 300 bass fingerlings/acre can frequently correct overpopulations of bream and undesirable fish.

## **10. Oxygen Deficiencies**

Oxygen deficiencies may occur during the spring and summer months, especially during the "spring turnover" (March and April) or during summer periods of hot, still, cloudy days. The critical time of oxygen shortage is at daybreak. Ponds should be watched closely during such periods. If fish are seen on the surface or otherwise showing distress, start remedial measures immediately. Use aeration equipment or a pump to lift surface water and spray it into the air and back into the pond. If fish are not surfacing in distress at daybreak, they are safe until the next daybreak, at least. Do not stir the water with a boat and motor, as this further reduces the available oxygen in the surface layer of water and distributes it throughout the water column.

## **11. Aquatic Vegetation**

Excessive aquatic vegetation can best be prevented in most ponds and lakes by providing and maintaining adequate deep water.

If a pond has a heavy growth of vegetation, do not treat over half of it with chemicals at one time to prevent an oxygen deficiency. Treat half of the pond, let the vegetation decay, then treat the remainder.

Refer to "Weed Control Guidelines for Kansas" prepared by Kansas State University for chemical recommendations on aquatic weeds. Apply chemicals according to product label directions.

A winter draw down may also be an effective weed control technique, especially if done in successive years. For effective weed control, the water level should be lowered to expose aquatic weeds in the more shallow portions of the pond. Usually, water levels are reduced enough to expose 35 to 50 percent of the pond bottom, but this percentage may vary greatly, depending upon topography and design of the pond. Maximum draw down should be accomplished by mid to late November and water level should remain low through February. Draw downs should not create excessive pond shallowness that results in fish kills during the winter.

Many types of aquatic vegetation can be controlled by grass carp. Stocking rates vary from 5 to 20 per acre, based on the severity of the weed problem.